



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,855	02/27/2002	Evan C. Unger	UNGR-1632	8641

23377 7590 10/07/2005  
WOODCOCK WASHBURN LLP  
ONE LIBERTY PLACE, 46TH FLOOR  
1650 MARKET STREET  
PHILADELPHIA, PA 19103

EXAMINER

SHARAREH, SHAHNAM J

ART UNIT PAPER NUMBER

1617

DATE MAILED: 10/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/084,855

Applicant(s)

UNGER, EVAN C.

Examiner

Shahnam Sharareh

Art Unit

1617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,47,49-51 and 55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,47,49-51 and 55 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 12, 2005 has been entered.
2. Claims 1, 47, 49-51, 55 are pending. Any rejection that is not addressed in this Office Action is considered withdrawn in view of the filings of Terminal Disclaimer or newly recited limitations.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 47, 49-51, 55 are rejected under 35 U.S.C. 102(b) as being anticipated by Unger et al US patent 5,469,854.

Unger teaches delivery systems comprising gas filled liposomes containing a bioactive agent, and an oil (see abstract, col 21, line 20-col 22, lines 9-67). The delivery systems of Unger contains one or more phospholipids selected from group phosphatidic acid, phosphatidylcholine, phosphatidylethanolamines, perfluorocarbon, and a suitable oils such as glyceryl monostearate, corn oil, olive oil, mineral oil etc... (see col 13, lines

Art Unit: 1617

30-45; col 8, lines 10-21; 32, lines 55-65; col 33, lines 5-10). Accordingly, Unger describes all limitations of the instant claims.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 47, 49-51, 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grinstaff et al US Patent 5,498,421 in view of Unger or Hirota et al US Patent 4,960,595.

The instant claims are directed to compositions comprising a therapeutic agent, a lipid microsphere encapsulating a perfluorocarbon gas and an oil.

5. Grinstaff discloses compositions comprising a biologic agent, a polymeric shell encapsulating a perfluorocarbon gas and an oil. (abstract, col 12, lines 10-40, examples 13, 35-37, 40, 46, claim 1, 12-13). The polymeric shell of Grinstaff is modified phospholipids which meets the limitation of the instant recitation "stabilized lipid microsphere." (see claim 26). Grinstaff teaches the use of suitable oil to dissolve his bioactive agents (see col 25, lines 3-20). Grinstaff adds that his polymeric shell contain contains diagnostic agent, such as a gas, in a dispersing agent. (see col 12, lines 34-45, col 54, lines 30-36). Grinstaff then claims that the dispersing agent can be a soybean oil, olive oil, etc...( see col 55, lines 47-25). Grinstaff also states that when such dispersing agent is used, the oil is within the shell surrounding the diagnostic or biologic agent. (see col 32, lines 11-35). Grinstaff uses such synthetic oils encompassed by the instant claims. (see col 25, lines 33-36; col 55, lines 55-61). Grinstaff does not explicitly teach the use of phosphatidic acid as a lipid.

6. The teachings of Unger are described above. Unger is used to show the use of phosphatidic acid as suitable lipid for preparing gaseous microbubbles.

7. Hiraota also describes phosphatidic acid as suitable auxiliary material that can stabilize~~s~~ dispersions of lipid microspheres such as liposomes (see col 3, lines 20-14).

Art Unit: 1617

8. Accordingly, it would have been obvious to one of ordinary skill in the art at the time of invention to add phosphatidic acid to shells of Grinstaff to improve stability of such gaseous shells, because as described in Unger or Hiraota, phosphatidic acid improves stability of lipid containing microbubbles. Finally, since all types of oil is expected to provide the same function in Grinstaff compositions, absent a showing of unexpected results, the use of any specific of oil, such as triacetin, in formulations of Grinstaff would have been obvious.

### ***Conclusion***

9. No claims are allowed.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shahnam Sharareh whose telephone number is 571-272-0630. The examiner can normally be reached on 8:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreenivasan Padmanabhan, PhD can be reached on 571-272-0629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SS



SREENI PADMANABHAN  
SUPERVISORY PATENT EXAMINER